WORKING PAPER

Improving community college to university transfer

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Abstract

Community college to university transfer (i.e., vertical transfer) is an important potential path to a bachelor's degree. However, community colleges may be particularly challenging for students to navigate. In this brief, we argue that the intersecting problems of a multiple-layered policy environment and the lack of clear and consistent information about these policies help to explain why vertical transfer rates are not improving very quickly. We also review the growing body of research on vertical transfer in order to make recommendations aimed at improving vertical transfer rates.

Keywords: higher education, community college, two-year college, transfer

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Community colleges may help to democratize higher education by providing access to those who wouldn't otherwise enroll or they may divert students away from four-year universities (Brint & Karabel 1989; Rouse, 1995). In her seminal work, Rouse (1995) provided evidence for the democratizing effect of community colleges by showing that they increase educational attainment, and community college to university transfer (i.e., vertical transfer) is an important potential path to a bachelor's degree. However, only 25 percent of students beginning higher education at a community college transfer to a four-year university (Beginning Postsecondary Students Longitudinal Study (BPS: 11/17)[1], and research suggests that students who start at community colleges with the goal of earning B.A.s are less likely to do so than similar peers who enter four-year institutions directly (Doyle, 2009; Long & Kurlaender, 2009; Monaghan & Attewell, 2015). This potential loss of human capital has motivated decades of policy strategies aimed at improving community college to university transfer. Despite these efforts, transfer rates remain low. In this brief, we argue that the intersecting problems of a multiple-layered policy environment and the lack of clear and consistent information about these policies help to explain why vertical transfer rates are not improving very quickly. We also review the growing body of research on vertical transfer in order to make recommendations aimed at improving vertical transfer rates.

[1] Students enter community colleges with many different goals (e.g. taking a class to hone a skill, earning a credential, improving language skills, etc.), which makes community college student outcomes difficult to assess. However, these figures are concerning to those attempting to reconcile the high educational aspirations of community college entrants with their subsequent outcomes. For example, 44 percent of community college entrants report that they expect to earn a bachelor's degree, but only approximately 13 percent manage to do so within six years of enrollment. These poor outcomes are even more severe for students from marginalized populations. While about 22 percent of Asian and 15 percent of White community college entrants earned a bachelor's degree, only 7 percent of Black students, 9 percent of Hispanic students achieved the same credential in the 2011 BPS cohort.

Low vertical transfer rates are particularly problematic because community college students start their higher educations with less social capital, on average, than their peers starting at four-year institutions. Students at community colleges are more likely to be from minoritized populations, more likely to be the first in their family to enroll in college and more likely to be older with family responsibilities and full-time jobs. Though these characteristics can also be viewed as strengths (Bowman, 2012), ultimately students with little spare time and less college knowledge than their peers may be more likely to be thrown off course when the information necessary for success is difficult to find or apply. Community colleges, which serve a broader set of student needs than most other institution types, with less funding, may be particularly challenging to navigate (Scott-Clayton, 2016). Moreover, the number of students entering community colleges may be growing as some states incentivize students to start at two-year institutions through free community college programs (Carruthers et al., 2018).

For community colleges to improve students' opportunities and fulfill the promise of upward mobility, the vertical transfer pathway needs to be well-paved. We make two arguments for why this is not currently so. First, multiple, overlapping transfer policies create a complex set of choices that are difficult for students and those who advise them to navigate. Second, transfer-related policies may be weak or ineffective if they ignore policy mediators, such as the ways students access information to guide their decisions. To explore these arguments, we survey recent transfer reform efforts, using examples from Tennessee and other states to illustrate the complicated nature of the transfer policy landscape, and examine what is currently known about the effectiveness of these efforts. We also review the growing body of qualitative research describing how students and advisors navigate these policies on the ground. We conclude by

offering a set of recommendations aimed at improving the implementation of policies meant to improve the vertical transfer pipeline.

The Crowded Transfer Policy Landscape

Scholars have hypothesized that the complexity of community colleges contributes to poor student outcomes at these institutions. Deil-Amen and Rosenbaum (2003) argue that this complexity may lead to inequities for students who are less able to utilize social capital to obtain high quality college guidance. Scott-Clayton (2016) argues that the complexity of community colleges causes students to experience choice overload, as well as to have trouble distinguishing what is most important to consider when making a decision. Faced with too many complex choices, students may also make decisions based on irrelevant factors such as how a choice is framed (Scott-Clayton, 2016). Marx and Turner (2020) build on this theory by providing empirical evidence that choice overload affects community college students' decisions about financial aid. The multiple layers of articulation agreements and transfer policies may contribute to this cognitive overload problem for students trying to make decisions about transfer, as well as for the advisors, faculty and administrators trying to guide them. Differences in higher education governance systems across states may also affect policy implementation, further exacerbating this issue.

Statewide and Local Articulation Agreements

To simplify and streamline in-state transfer, many states have implemented statewide articulation policies that indicate how credits earned at one institution are to be accepted and applied at all public institutions within the state (Whinnery & Peisach, 2022). Several states, including Tennessee, also have multiple policies aimed at improving transfer rates, or at least smoothing the transfer process, written into their state codes. Statewide transfer articulation

agreements may be comprised of a set of core courses that are guaranteed to transfer or an associate degree that may come with a guarantee that courses will transfer or that the transfer student will be admitted to the receiving institution with junior status (Whinnery & Peisach, 2022). Prior to the 1970s and the advent of statewide articulation agreements, articulation agreements were entered into locally and the rules governing transfer and credit transfer were generally set and determined by local institutional partners on an institution-by-institution basis (Kintzer & Wattenbarger, 1985). Roksa and Keith (2008) argue that articulation policies aren't meant to improve transfer rates, but rather to reduce credit loss during the transfer process.

In Tennessee, prior to 2010, credit transfer was primarily governed by articulation agreements set and determined by local institutional partners. Some institutions, like the 13 community colleges and six universities,[2] maintained agreements dating back to 2004 detailing general education credits transferrable between system colleges (Tennessee Board of Regents, n.d). Under these agreements, students completing associate's degrees and transferring to another TBR institution were guaranteed to have satisfied all lower-division general education requirements needed for a baccalaureate degree. For those transferring without a credential, such agreements guaranteed students could transfer blocks of completed subject categories such as natural sciences or mathematics. However, in the absence of statewide articulation agreements, students seeking to transfer to one of Tennessee's six University of Tennessee (UT) institutions were still subject to separate and disparate transfer conditions. Moreover, beyond general education coursework, students' transfer pathways remained largely unstructured, giving students little guidance on transferable courses for particular majors.

[2] The Tennessee public higher education system is comprised of 12 four-year colleges and universities, 13 community colleges and 27 colleges of applied technology (TCATs). In 2016, the Focus Act allowed the four-year institutions to break away from the Tennessee Board of Regents, which now only governs the 13 community colleges and 27 TCATS.

Recognizing a need to streamline transfer, the Complete College Tennessee Act (CCTA) of 2010 required that Tennessee Board of Regents colleges and universities in the University of Tennessee system work together to identify 60 credit hours of lower division coursework that could transfer between all included institutions. Colleges and universities were also supposed to develop clear tools for communicating transfer pathways with students to ensure students received "effective information and directions that specify curricular paths to a degree" (CCTA, 2010).[3] Finally, the CCTA developed provisions for institutions to adopt Dual Admission Transfer programs under which students entering community college could be jointly admitted to a public four-year institution and receive early advising and resources from their intended transfer destination.[4]

Researchers using national datasets to estimate the impact of state-level transfer policies and articulation agreements on transfer rates and degree completion have shown mixed findings. Studies of statewide articulation agreements using national data sets have found overall that there is no impact of living in a state with a statewide articulation agreement on a student's likelihood of transferring (Anderson et al., 2006; Gross & Goldhaber, 2009; Roksa, 2009; Roksa & Keith, 2008; Stern, 2016), though these studies ignore variation across policies and state contexts. Roksa and Keith (2008), and Stern (2016), however, find that there is associational evidence that living in a state with a statewide agreement may increase student's probability of attaining a bachelor's degree. Regardless, studies examining whether the strength of a statewide policy matters for transfer also find no impact (Gross & Goldhaber, 2009).

[3] In addition to the aforementioned legislative mandates, the CCTA also required that Tennessee's public institutions adopt a common course numbering system for transferable courses and to identify and flag courses not designed for transfer.

[4] Though these Dual Admission Transfer programs were intended to be established between all two and four-year institutions in the state, our research indicates that approximately 40 such partnerships have been adopted, representing only 16% of all possible partnerships that could be established (Tennessee Board of Regents, n.d.).[4]

A handful of researchers have used state longitudinal data sets to examine the relationship between statewide transfer policies, such as a transferable core, and persistence-related outcomes including transfer, credit transfer and B.A. attainment. The Ohio Transfer Module (OTM), part of Ohio's original Transfer and Articulation Policy, became the first of such agreements in Ohio to guarantee the transferability of general education credits earned at one institution to any other public higher education institution in the state (ODHE 2017, 7). Boatman and Soliz (2018) use propensity score matching to compare outcomes of transfer-intending students who completed the OTM with those who didn't. They find positive effects for students completing the statewide general education transfer module in Ohio. However, so few students (15%) complete the module that it is not clear that this policy does much to improve transfer rates.

Like Ohio, Texas defines a transferable core of lower-division courses which should be universally accepted at four-year institutions within the state. In this context, Schudde et al. (2022) examine the relationship between pre-transfer credit accumulation and B.A. attainment for students who successfully transferred. They find that accumulating up to 44 core credits, which is two more credits than it takes to complete the core, is positively associated with B.A. attainment, with the probability of earning a B.A. increasing with credit accumulation up to that point. The authors find diminishing returns for credit accumulation beyond that point.

In North Carolina, the Comprehensive Articulation Agreement (CAA), which was approved by the Board of Governors of The University of North Carolina and the State Board of The North Carolina Community College System and then legislated through S.L. 2013-72 states that the goals of the agreement include fostering greater collaboration between sectors of education, simplifying the transfer process as a whole, making transfer credits more uniform, and

developing more effective electronic systems that would better facilitate transfer efficiency and enhance distance education. This agreement also incentivizes the completion of an associate degree before transfer by guaranteeing admission to a four-year institution in the UNC system with junior standing (S.L. 2013-72).[5] Worsham et al. (2021) look at the effect of this statewide articulation agreement on credit accumulation for student transferring within the NC system. They find that, after the policy, students had accumulated 2 to 5 fewer credits at graduation, on average, suggesting that the CAA may have improved credit transfer.[6] Kopko and Crosta (2014), use data from an unnamed state, that, like North Carolina, incentivizes the completion of an associate degree before transfer. Using propensity score matching, the authors find that students who earn an associate of arts or associate of science before leaving the community college are 6.3 percentage points more likely to earn a B.A. More research is needed on the effect of these types of transfer policies, but this initial set of studies suggests that completion of a transferable core or associate degree is at least positively associated with outcomes such as degree attainment and graduating with fewer excess credits. However, only a small percent of transfer-intending students complete these core courses or degrees, and none of the studies described above are able to rule out selection bias.

Structured Pathways

Some states have adopted new transfer articulation policies which provide students with more structured transfer guidance such as statewide Associate Degrees for Transfer (ADTs). ADTs are transfer policies that guarantee courses taken while completing an associate degree (sometimes in specified programs of study) will transfer in their entirety (i.e. including major-

[5] Students must also meet a minimum GPA and "all application requirements at the receiving institution (ECS, 2022).

[6] Monaghan and Attewell (2015) find that credit transfer is positively associated with BA completion for transfer students.

related courses) to fulfill the lower-division requirements of a bachelor's degree. At least 35 states are currently implementing ADTs and although these policies vary, the primary intent is to expand the scope of courses guaranteed to transfer beyond general education course work (ECS, 2022). In many states, ADTs improve upon previous statewide transfer policies by standardizing lower-division requirements in specific major areas across state institutions. They also reduce course-taking ambiguity by providing students with major maps or course-taking guides that specifying the transferability of courses in particular programs of study. In Tennessee, transferrable associate degrees are known as Tennessee Transfer Pathways (TTPs). TTPs are awarded in specific disciplines or majors and consist of general education and lower-division prerequisite and major courses guaranteed to transfer, in their entirety, across all public institutions throughout the state (CCTA, 2010). Under this legislation, students completing TTPs, and transferring to a public four-year institution, would be deemed to have met all requirements necessary to achieve junior standing in a given major.[7]

Over 30 percent of entering cohorts enroll in one of Tennessee's 79 TTPs (Tennessee Higher Education Commission (THEC), 2021). These pathways are developed in collaboration with major higher education state agencies, institutional faculty, and the state legislature and reviewed every five years (THEC, 2021). Outside of these pathways, community colleges and universities continue to maintain "university parallels" or articulation agreements/ degree program pathways negotiated bilaterally among institutional partners. In fact, pathways represent only 12 percent of the over 650 degree programs offered at Tennessee's community colleges (THEC, 2021). Thus, while Tennessee continues to develop and improve upon its TTPs, officials

[7] By 2013, 36 transfer pathways were created in the bachelor's degree programs with the highest enrollments. In 2014, additional legislation was enacted to expand these pathways to include the 50 most popular undergraduate degree programs (H.B. 2246, 2014).

note that students enroll in non-TTP transfer pathways at higher rates than they do in TTPs (A. Moreland, personal communication, June 14, 2021), indicating that TTPs add to, rather than replace, structures instituted before the CCTA.

In other states, the development of ADTs has followed similar trajectories. For example, in 2018 Ohio implemented its Guaranteed Transfer Pathways which include degree guides (Transfer Assurance Guides (TAGS)) detailing information about courses satisfying associate degree and guaranteed transfer requirements (Ohio Department of Higher Education, n.d.). In addition to providing students with additional course-taking structure, ADTs are also championed by policymakers interested in ensuring that community college students earn a valuable labor-market credential, irrespective of bachelor's degree completion.[8] In the fall of 2010 the California Senate adopted the Student Transfer Achievement Reform Act (Bill 1440), which guarantees that a student who completes an ADT and maintains a minimum GPA of 2.0 will be admitted to at least one California State University campus with junior status (Baker et al., 2021). The California ADT is comprised of lower-division courses in the student's major as well as general education courses that will transfer to the CSU (Baker et al., 2021). Faculty from California Community Colleges (CCCs) and CSUs worked together to develop the major-specific curricula. The ADTs are the same, within a specific major, across CCC campuses (Baker et al., 2021).

Spencer (2019) examines whether the introduction of statewide transfer guides in Ohio induced more students into the targeted majors. He uses statewide longitudinal data to explore whether the availability of TAGS caused students to take prerequisite coursework that would

[8] In Massachusetts, associate degree completion via a Associates to Bachelor (A2B) Degree pathway is financially incentivized. Those transferring after completing an (A2B) Degree are eligible to receive the MassTransfer Tuition Credit, which discounts tuition at Massachusetts public universities by approximately 10 percent for up to two years (Massachusetts Department of Higher Education, n.d.).

prepare them to enter the targeted major, and finds mixed evidence based on course type. For example, he found students were more likely to take courses in history, which was one of the targeted majors, but not courses in economics or business (Spencer, 2019). Baker (2016) finds that in California, ADTs increased associate degree attainment in the departments in which they were offered by 35 percent. These gains appeared in the second and third years of ADT implementation. The effect of these policies on transfer, while small, also appear to be positive. Community college students in ADT-targeted majors experienced a one percent increase in probability of transfer (Baker, 2016; Baker, Friedmann, & Kurlaender, 2021; Shatt, 2020). Moreover, among those that transferred, ADTs reduced the number of excess credits students earned as well as the overall time these students spent in college (Baker, Friedmann, & Kurlaender, 2021).

Guided Pathways

Though not exclusively focused on transfer, policies emerging from Guided Pathways reforms are an important part of efforts to improve transfer. Guided Pathways is a framework for reform which calls for colleges to enact whole-college improvements rather than focusing efforts on piecemeal interventions (Bailey et al., 2015). Under this framework, community colleges are encouraged to significantly restructure academic programs and reorganize advising and other student support services to simplify students' day-to-day college experiences (Bailey et al., 2015). Guided Pathway practices are categorized into four major reform areas: "mapping pathways to student end goals, helping students choose and enter a program pathway, keeping students on the path, and ensuring that students are learning" (Jenkins et al., 2018). Though these practices are broadly defined, in practice, Guided Pathway efforts should be similar across colleges. Such efforts include reorganizing similar degree programs into easily identifiable

disciplinary subject areas, overhauling math remediation and degree completion requirements to better meet students' career needs, and intensifying advising services to include comprehensive degree planning and progress monitoring (Jenkins et al., 2018). Although not specifically a transfer-specific reform like ADTs, the goal of the Guided Pathways model is to help community college entrants achieve their degree goals, which for many students, includes transfer to a four-year institution. The Guided Pathways framework is also notable because it calls for comprehensive large-scale changes in practice, rather than focus solely on streamlining credit articulation.

Nationwide over 400 community colleges have currently adopted this reform (Jenkins et al., 2018). At least 16 states, including the states with the largest community college enrollments such as California, Texas, Florida, and New York, have committed to scaling Guided Pathway efforts statewide (Community College Research Center (CCRC), 2021). In states like Tennessee, Guided Pathway reforms are undertaken in conjunction with existing statewide transfer articulation reforms. According to a report by the CCRC, all 13 of Tennessee's community colleges are currently implementing Guided Pathways practices. In fact, in 2018 the state was considered a leader in Guided Pathway adoption (Jenkins et al., 2018).

Preliminary descriptive data suggests that colleges implementing Guided Pathways have higher enrollment rates in college-level courses among first-year students, reductions in non-degree course-taking, and increased completion rates (CCRC, 2021). Gains made also appear to include vulnerable sub-populations such as Black and Latinx students, although gaps between the attainment of these historically marginalized groups remain (Lin, Fay, & Fink, 2020). Descriptive evidence from Tennessee also suggests that such reforms may have positively influenced first-year momentum indicators, but overall, the timing of such reforms with other

major policy changes, such as the adoption of Promise, Tennessee's free college program, in 2014, make it difficult to determine the impact of Guided Pathway efforts (Jenkins et al., 2018).

Policy Mediators

By examining how students make decisions about transfer, recent qualitative and mixed-methods studies provide insights as to why well-intentioned policy efforts at the state or institution levels may be minimally effective or ineffective. By taking the student perspective these studies provide a system-wide view and demonstrate how the crowded policy environment can create complicated choices for students and the faculty and administrators who are advising them.

Schudde et al. (2021a), using longitudinal interview data from 66 students at 2 community colleges in Texas, find that the policy landscape around transfer is too complex for most students to successfully navigate. Moreover, some policies made at the state level are in conflict with each other. For example, students who are completing Texas's transferable core of courses may be accumulating excess credits because core requirements can be at odds with major requirements (Schudde et al., 2021a). Mesa and Soliz (2022), drawing on survey and focus group data from students who have successfully transferred in Tennessee, find that many students are unaware of the policies and programs they could leverage to ease the transfer process. For example, they find that only about half of the students in their sample participated in a TN Transfer Pathway (TTP), and only approximately 14 percent of students reported participating in a Dual Admission Transfer program, though both of these programs could clarify transfer pathways and help protect students from credit loss.

Trying to simplify the vertical transfer pipeline is an inherently complicated undertaking because it requires collaboration across multiple institutions which, despite potentially being

governed by the same body, may have different priorities and missions. In her book based on interviews and surveys of 1,670 students at 3 large, two-year colleges in a midwestern state over the course of four years, Wang (2020) describes students, particularly those in STEM majors, having trouble getting their courses to transfer because faculty at four-year institutions refuse to acknowledge the equivalency of lower-division courses taken in students' majors at community colleges.

Moreover, as described above, with their multiple missions and limited resources, community colleges are complex institutions to navigate, and clear, student-centered information on how to progress to a degree may not be readily available (Schudde et al., 2020). Ideally institutions would provide up-to-date and easy-to-follow information related to transfer on their websites. However, Schudde et al. (2020) find that the majority of community college websites in Texas do not provide students with adequate access to useful transfer information. Other researchers report similar findings, with the students in their sample expressing frustration over low-quality community college websites (Mesa & Soliz, 2022; Wang, 2020).

Because students have trouble making sense of the options created for them by state and institution-level policies, these policies are filtered through street-level agents in the form of formal and informal[9] advisors and administrators. Though some evidence suggests that advisers can help students build transfer capital (Jabbar et al., 2021), and that meeting with an advisor increases a student's probability of transfer (Wang et al., 2020), advisors themselves must untangle the multiple layers of policy in order to help students make decisions that will allow them to transfer (and transfer without losing too many credits) (Schudde et al., 2021b). Advisors may also have agendas shaped by their deans, the values of the college or their own beliefs about

[9] By "formal and informal advisors" we mean to refer to all the individuals in a college who might provide advice to a transfer student including official transfer advisors, program advisors, faculty, academic support specialists, etc.

what is best for students. For example, Grote et al. (2020) describe advisors receiving conflicting messages from their college about how to advise students. In another study the administrators charged with implementing policies or programs to improve vertical transfer refuse to comply because this is at odds with what they perceive to be the mission of their college (Chase, 2016).

Finally, advisors may push students towards what they believe to be an optimal approach, which may not be optimal for a particular student given their background or goals (Wickersham, 2020). For example, earning an associate degree may be optimal for a student whose responsibilities outside of college will force them to take longer to graduate, but less optimal for a student who can finish their credits quickly once they transfer to the four-year. Some research also suggests students find advisors to be inaccessible (Jabbar et al., 2021; Mesa & Soliz, 2021; Schudde et al., 2021b; Wang, 2020), for example, if their offices are only open during standard business hours. Students also report receiving the wrong information from advisors, or information that did not apply to their case (Allen et al., 2014; Mesa & Soliz, 2021; Schudde et al., 2021b; Wang, 2020). This is not meant to be an indictment against the individuals who are working hard to support students at community colleges, but rather a critique of a system that leaves advisors with a lack of the time and access to information necessary to tailor advising to individual students, each with their own particular set of goals and constraints. If advisors aren't available or deemed trustworthy, students end up relying on faculty mentors, family or friends who may or may not have the information available to help students make optimal decisions (Malizewski & Hayes, 2020).

This lack of access to clear and consistent information about transfer policies is unfortunate because Jabbar et al. (2021) find that institutions with strong transfer-related supports were able to facilitate transfer for students whether or not they came in with knowledge

about how to navigate the system. Some of the institutional practices described by Jabbar et al. (2021) were aligning course requirements across community colleges, offering advising outside of traditional business hours and emailing students regularly about visting an advisor, though these authors don't specify which practices are taking place at the institutions they consider to have strong institutional supports. Fink and Jenkins (2017), using data from administrator interviews, find that, at community colleges with above average transfer rates, staff and faculty have bought into the goal of making transfer a priority, there are clear course pathways to transfer, and there is high quality, tailored advising for transfer-intending students.

Policy Recommendations and Conclusion

Our review of the evidence has led us to four policy recommendations aimed at simplifying the transfer policy landscape and improving policy implementation.

Recommendations

First, the governance structures of public higher education systems should prioritize a single reform strategy. Though it might not be possible or desirable to erase the history of transfer and articulation-related policies within a state system, all stakeholders should agree upon a single strategy to improve transfer, such as ADTs, and then aggressively and consistently provide information about this policy or program to formal and informal advisors and students. Community college students should be informed about this policy during an orientation, whether or not they think they want to transfer at that time; there should be signs around campus informing students of this policy; and there should be a link to clear and up-to-date information about this policy in a prominent place on all two-year college websites. Convening meetings and trainings in order to bring all stakeholders to consensus around a single policy strategy will be time intensive, and providing clear and up-to-date information on this policy at student

orientations, administrator and faculty trainings and on websites may be costly. We recommend hiring additional staff to be solely responsible for this messaging.

Though, as mentioned above, one approach may not be optimal for all students, we rationalize that consistent and accurate messaging about a single, evidence-backed, policy will do more to improve vertical transfer rates and B.A. attainment than potentially inaccurate or inconsistent messaging about several different policy options. However, if there are contradictions across policies, as described by Schudde et al. (2021a), these should be fixed.

Second, the state should incentivize collaboration across institutions, both within two year and four-year sectors, and across sectors. Within sectors institutions with the same programs of study should work to have the same major requirements and recognize the same courses as fulfilling general education requirements. This in turn may simplify conversations when two-year and four-year institutions work together to agree on which community college courses will count toward major requirements at the four-year institution. This type of consistency would also help students who attend or move between multiple institutions (i.e. "swirl") to stay on-track. Though this type of collaboration will be extremely time-consuming, Baker et al. (2021) describe it happening in California and it is also taking place in Tennessee (J. Roberts, personal communication, June 27, 2022).

Third, we recommend that state policymakers or governing boards implementing ADTs, or another reform, include individuals at all levels of the colleges in the strategy and its implementation, including presidents, deans, formal and informal advisors and faculty. Fink and Jenkins (2017) find that institution-wide buy-in is a common characteristic of community colleges with higher-than-average transfer rates. If advisors and faculty are brought into conversations about reform, not only will they be more motivated to recommend this strategy to

students, they will also be more knowledgeable about different transfer policies and the trade-offs associated with each. Implementing this strategy may require increasing communication across different levels of the college and convening meetings to discuss the strategy. We expect that implementing this recommendation may be time consuming but not especially costly.

Fourth, and finally, state systems should prioritize clear messaging to students and advisors. Students by choice or by necessity are often navigating transfer on their own (Wang, 2020; Schudde et al, 2021a; Jabbar, 2021; Mesa & Soliz, 2022) so websites should be clear, up to date and easy to navigate. Formal transfer advisors should also be trained with clear, current information about students options and the potential down sides of each. They should also be able to find more information if requirements vary across four-year institutions (e.g. through access to an electronic course equivalency checker or something similar). Informal advisors such as faculty, who many students turn to (Mesa & Soliz, 2022), should also be trained. Formal and informal advisors need to be provided with clear policy maps or charts explaining the options for transfer students, the tradeoffs associated with each, and these charts should be updated regularly. If a system follows our first recommendation to prioritize a single strategy, these more comprehensive policy maps would be a secondary resource when the priority strategy simply will not work for a student. Colleges implementing this strategy should commit to hiring additional staff whose primary responsibility is to communicate with other institutions and the state in order to maintain up-to-date transfer information on college websites, as well as to share this information at student orientations and at meetings of advisors, faculty and other administrators who may sometimes advise students.

Conclusion

Though many students enroll in community colleges with the goal of eventually transferring to a four-year college or university to earn their bachelor's degree, few manage to do so. Recognizing that this transfer function is an important part of the mission and promise of community colleges, much policy effort has been put into improving this transfer pipeline. However, in spite of these efforts, transfer rates remain low. The goal of our policy brief has been to explore this policy puzzle. First, we have found that there are several different types of transfer and articulation policies operating, not only across, but also within states, including agreements between individual institutions. As a result, each additional strategy aimed at improving transfer may add to the complexity of options available to students, as well as what an advisor needs to understand. Nevertheless, state policy seems to be headed towards simplification of choices, with the adoption of policies such as California's Associate Degrees for Transfer. The positive effects of ADTs on vertical transfer in California, though small, suggest that this is the right direction to be heading. However, our second key finding is that students lack access to clear and accurate information about transfer and policies such as ADTs that may smooth their transfer pathways. As long as students and advisors experience information constraints, even well-designed reforms are unlikely to have large impacts on transfer rates or B.A. attainment for students who begin at community colleges.

Despite a growing body of high-quality research on vertical transfer, there is much more to be done. First, we need more studies of the impact of ADTs on outcomes including vertical transfer, credit transfer and B.A. attainment. Though Baker et al. (2021) provide a strong foundation for this research, additional studies in other contexts and over time, as institutions get better at promoting this strategy, are necessary. Second, we have found few impact evaluations that disaggregate samples by student group. It is important to know if promising approaches are

only benefiting some students. Next, the qualitative studies included in this brief demonstrate how necessary it is to understand how policies are implemented at the institution level and how students are interacting with these policies. In addition to more studies examining how students navigate the transfer pipeline, we need to know how college-level administrators and formal and informal advisors make sense of these policy reforms and make decisions about how to advise students (or the advisors themselves for higher level administrators).

Finally, we did not include affordability as an obstacle to transfer in this brief because we did not find sufficient evidence to address it. However, students in Wang's (2020) study describe affordability as an obstacle to transfer, and some participants in Mesa and Soliz's (2022) study observe that they couldn't have transferred without access to transfer scholarships. Meanwhile, Marx and Turner (2019) find that access to loans increases vertical transfer rates. All of this suggests that the relationship between access to financial aid and vertical transfer is an important area for future research.

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